

## Assignment -4

### Inventory Management System for Retailers –

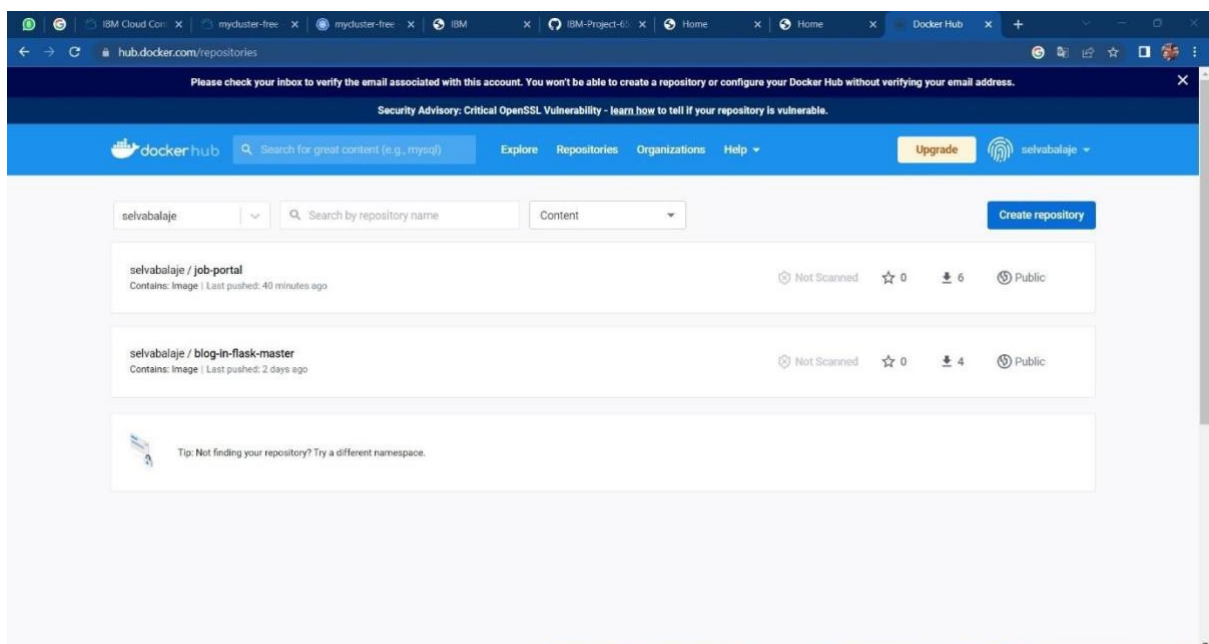
Student Name	Bejanshini B
Student Roll Number	960519104015

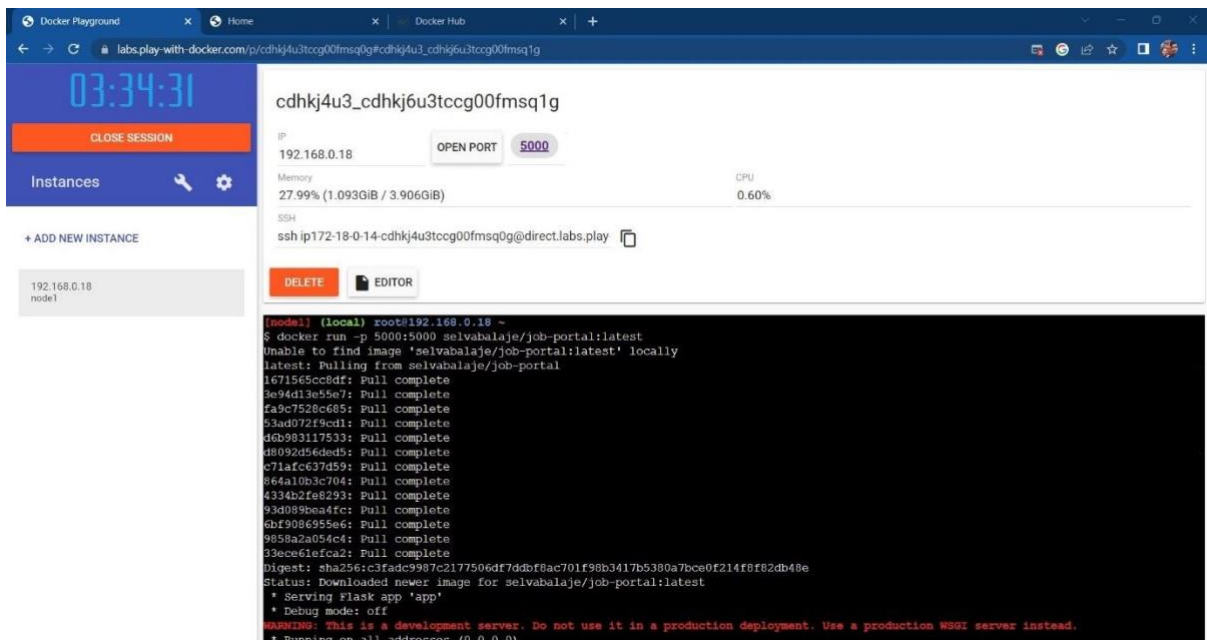
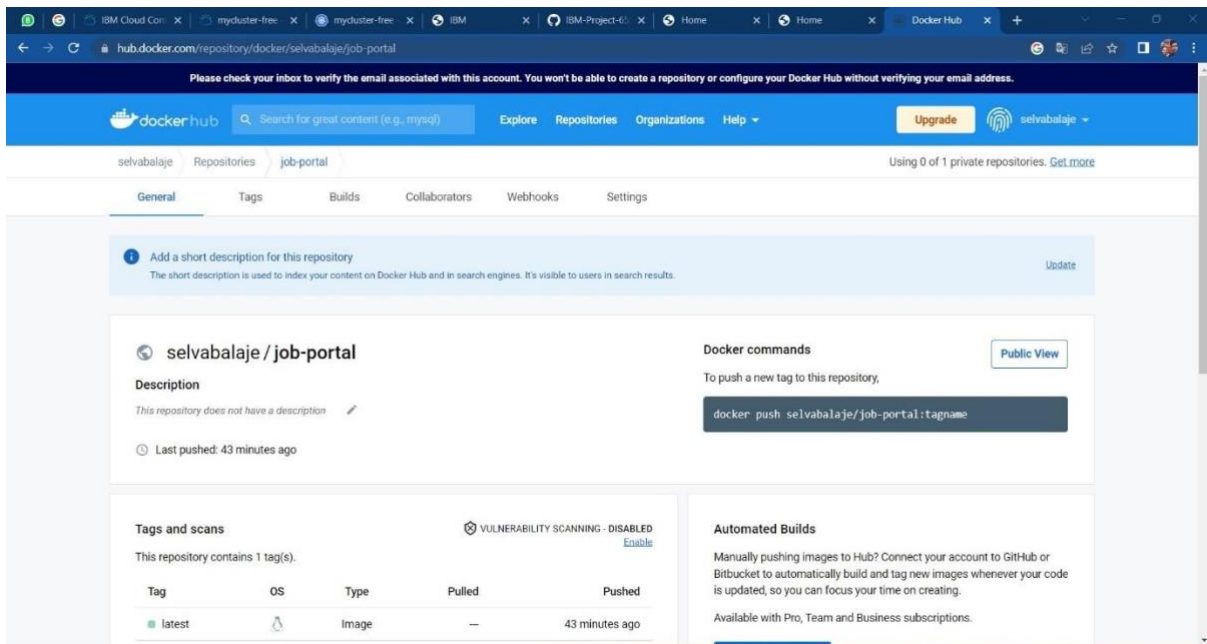
#### Question-1:

1. Pull an Image from docker hub and run it in docker playground.
2. Create a dockerfile for the job portal / flask application and deploy it in Docker desktop application.
3. Create a IBM container registry and push docker image of flask application or job portal app.
4. Create a Kubernetes cluster in IBM cloud and deploy flask application image or job portal image and also expose the same app to run in Nodeport.

**Solution: \*\*All the required files are uploaded in the ASSIGNMENTS/PADMANABAN P (TEAM LEADER)/ASSIGNMENT 4 folder in the Git repo. Please verify it sir/mam.**

**Step 1:** Pull an Image from docker hub and run it in docker playground.





Docker Playground x Home x Docker Hub x +

labs.play-with-docker.com/p/cdhkj4u3tccg00fmsq0g#cdhkf4u3\_cdhkj6u3tccg00fmsq1g

03:33:35

CLOSE SESSION

Instances

+ ADD NEW INSTANCE

192.168.0.18  
node1

cdhkf4u3\_cdhkj6u3tccg00fmsq1g

IP: 192.168.0.18 OPEN PORT 5000

Memory: 28.00% (1.094GiB / 3.906GiB) CPU: 0.47%

SSH: ssh ip172-18-0-14-cdhkj4u3tccg00fmsq0g@direct.labs.play

DELETE EDITOR


```
864a10b3c704: Pull complete
4334b2fe8293: Pull complete
93d089bea4fc: Pull complete
6bf9086955e6: Pull complete
9858a2a054c4: Pull complete
33ee61afa2: Pull complete
Digest: sha256:c3fadc9987c2177506df7ddb8ac701f98b3417b5380a7bce0f214f0f82db49e
Status: Downloaded newer image for selvalalaje/job-portal:latest
* Serving Flask app 'app'
* Debug mode: off
WARNING: This is a development server. Do not use it in a production deployment. Use a production WSGI server instead.
* Running on all addresses (0.0.0.0)
* Running on http://127.0.0.1:5000
* Running on http://172.17.0.2:5000
press CTRL+C to quit
^C(pressed) (local) root@192.168.0.18 ~
$ docker run -p 5000:5000 selvalalaje/job-portal:latest
* Serving Flask app 'app'
* Debug mode: off
WARNING: This is a development server. Do not use it in a production deployment. Use a production WSGI server instead.
* Running on all addresses (0.0.0.0)
* Running on http://127.0.0.1:5000
* Running on http://172.17.0.2:5000
```

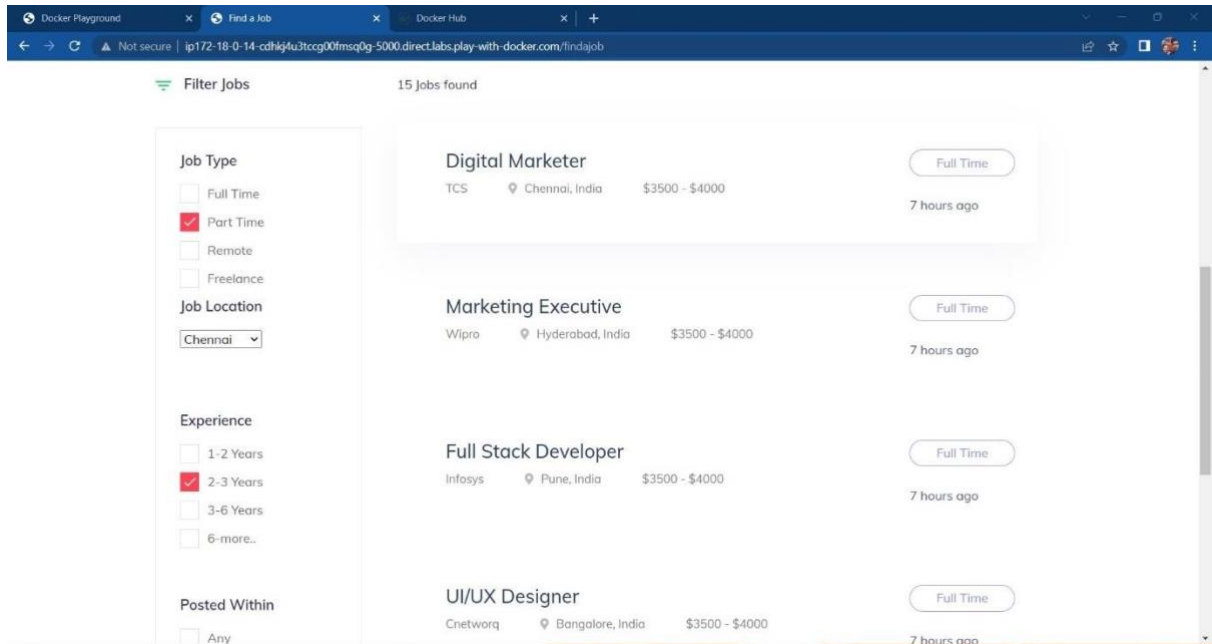
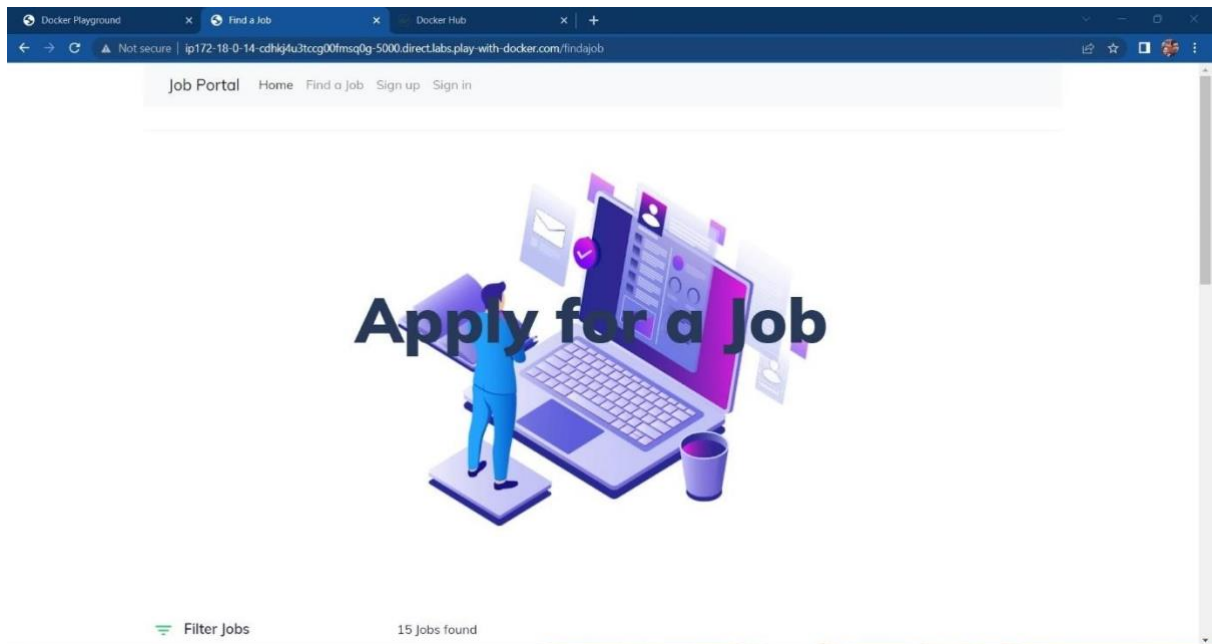
Docker Playground x Home x Docker Hub x +

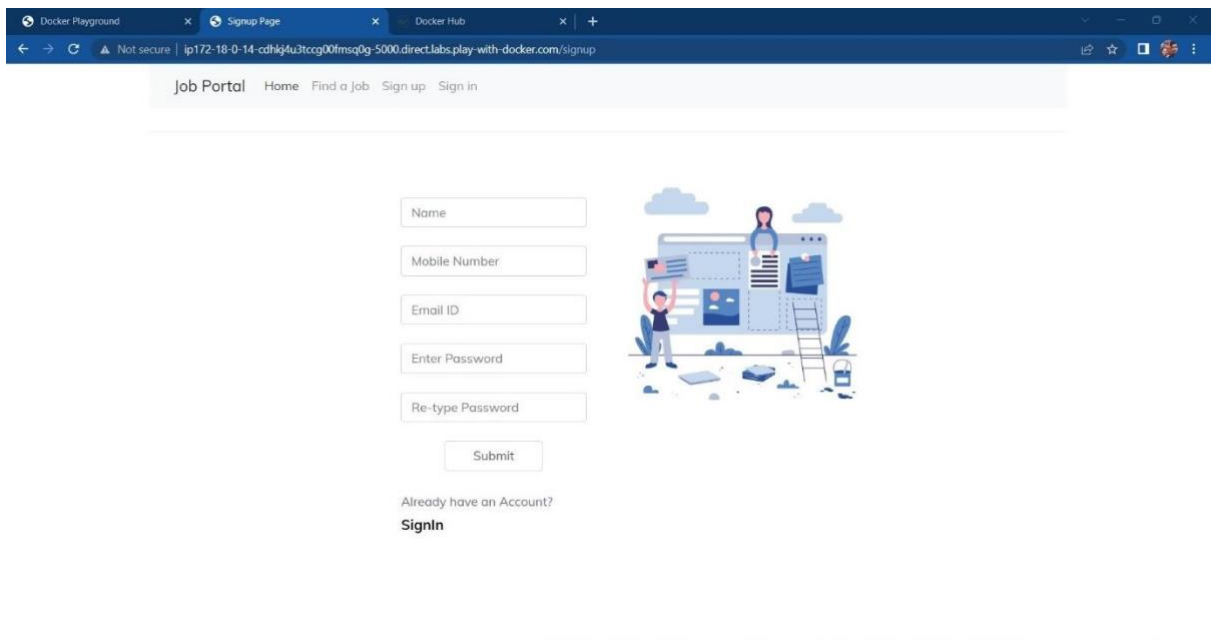
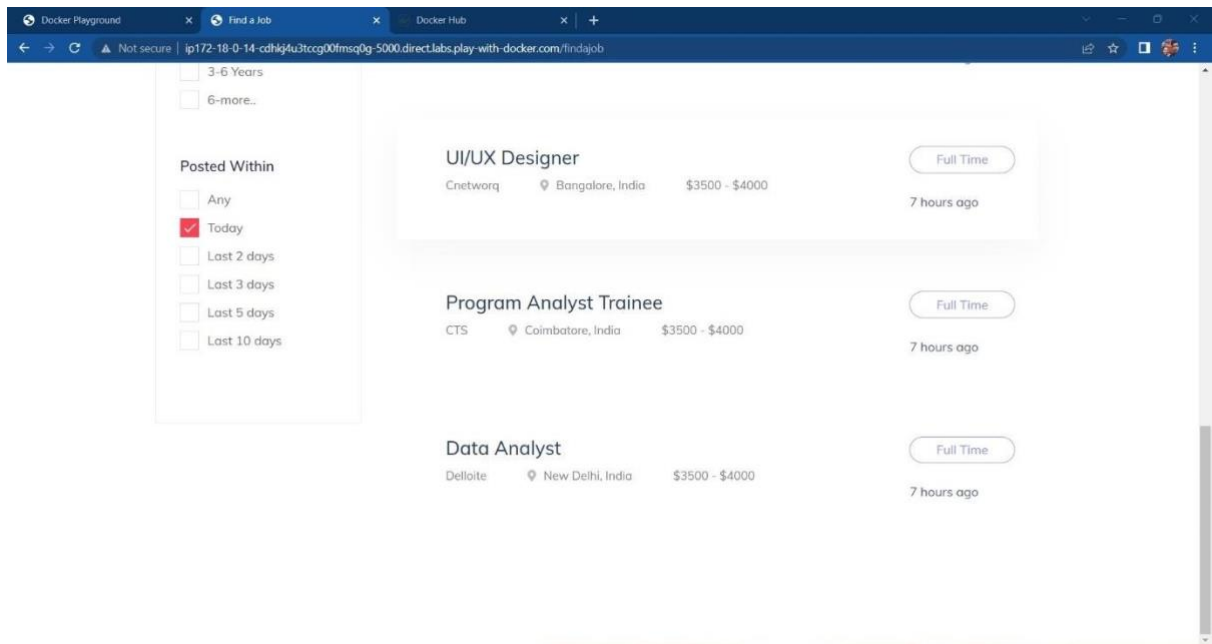
Not secure | ip172-18-0-14-cdhkj4u3tccg00fmsq0g-5000.direct.labs.play-with-docker.com

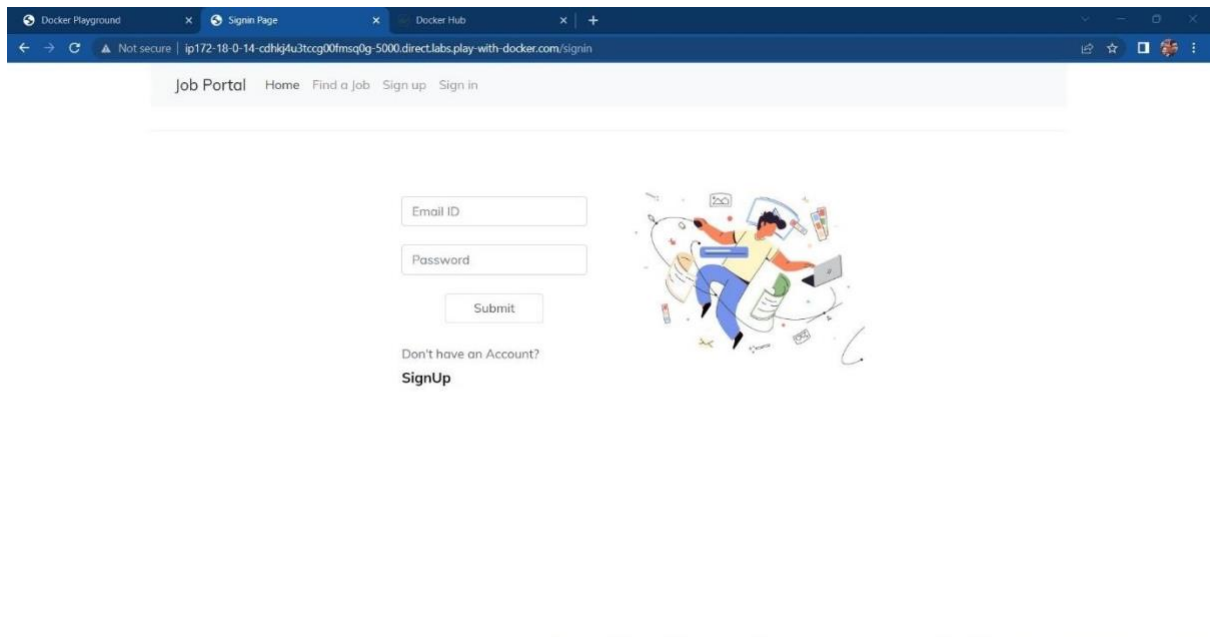
Job Portal Home Find a Job Sign up Sign in

Find the most exciting startup jobs

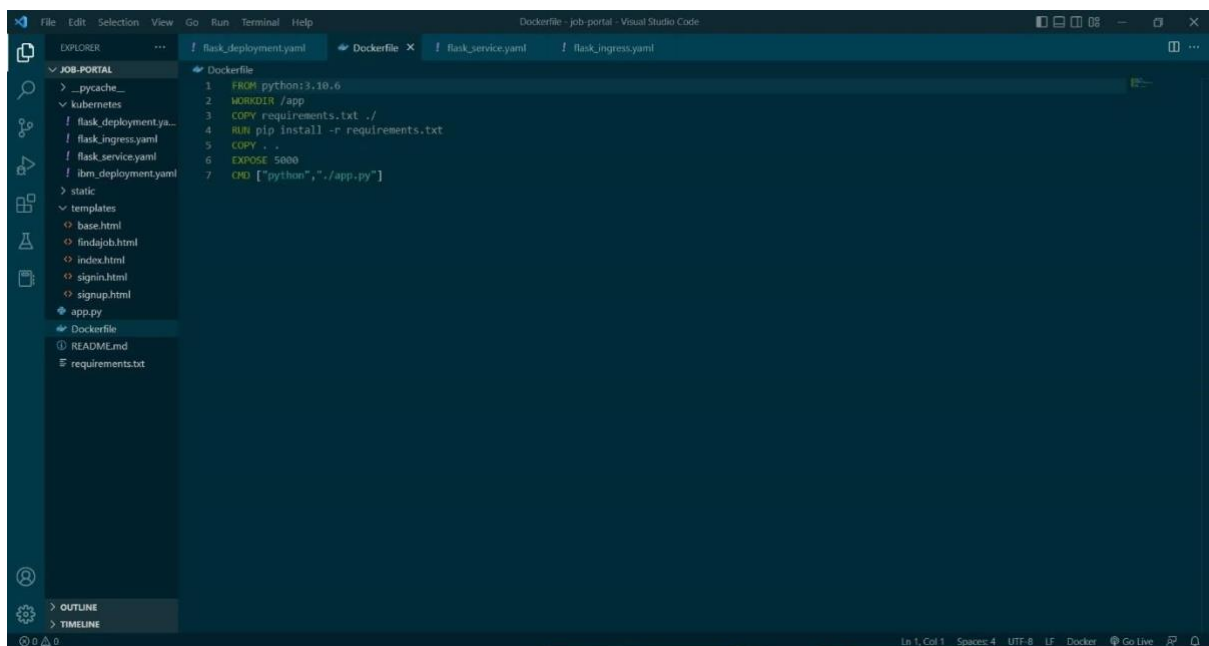


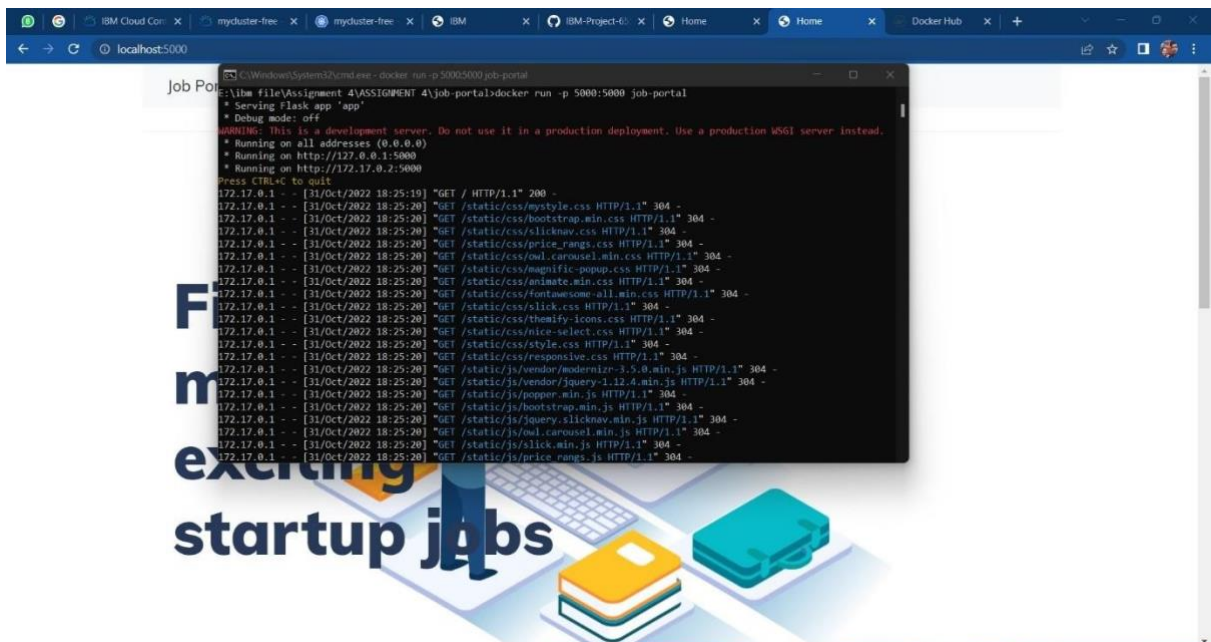
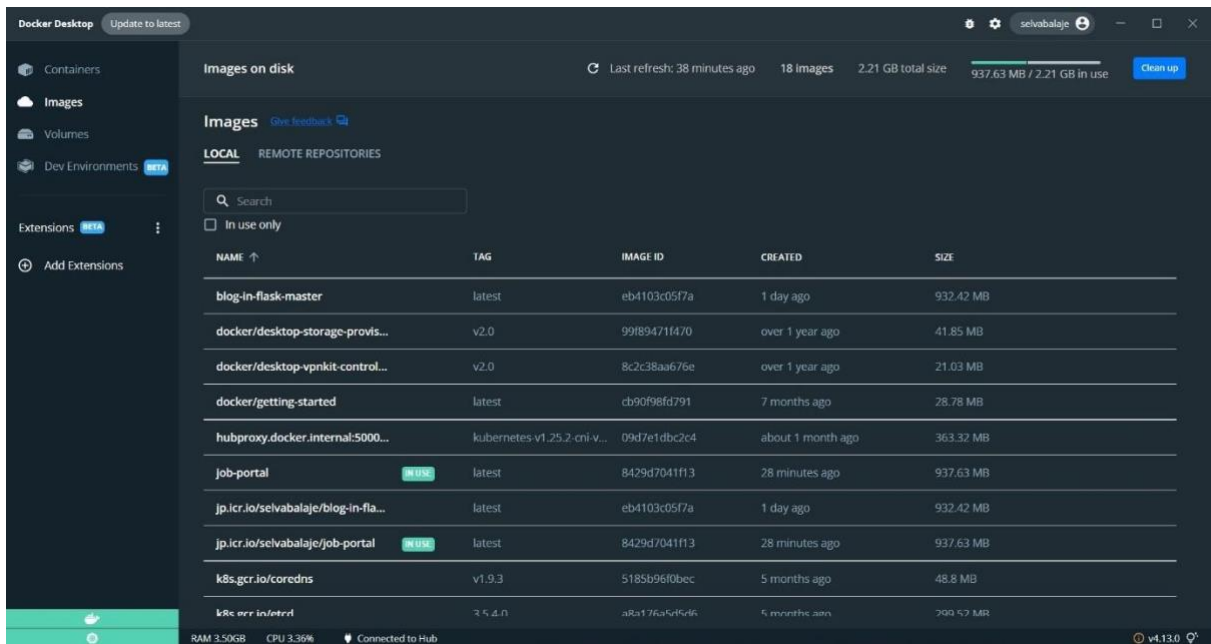




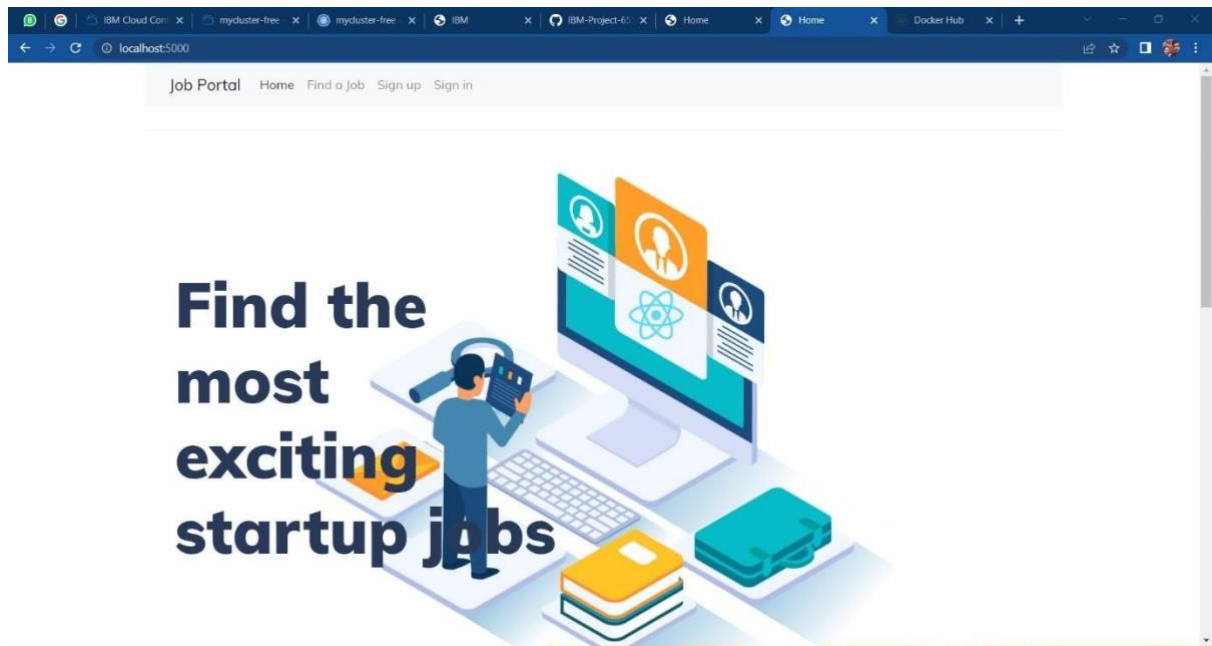


**Step 2:** Create a dockerfile for the job portal / flask application and deploy it in Docker desktop application.

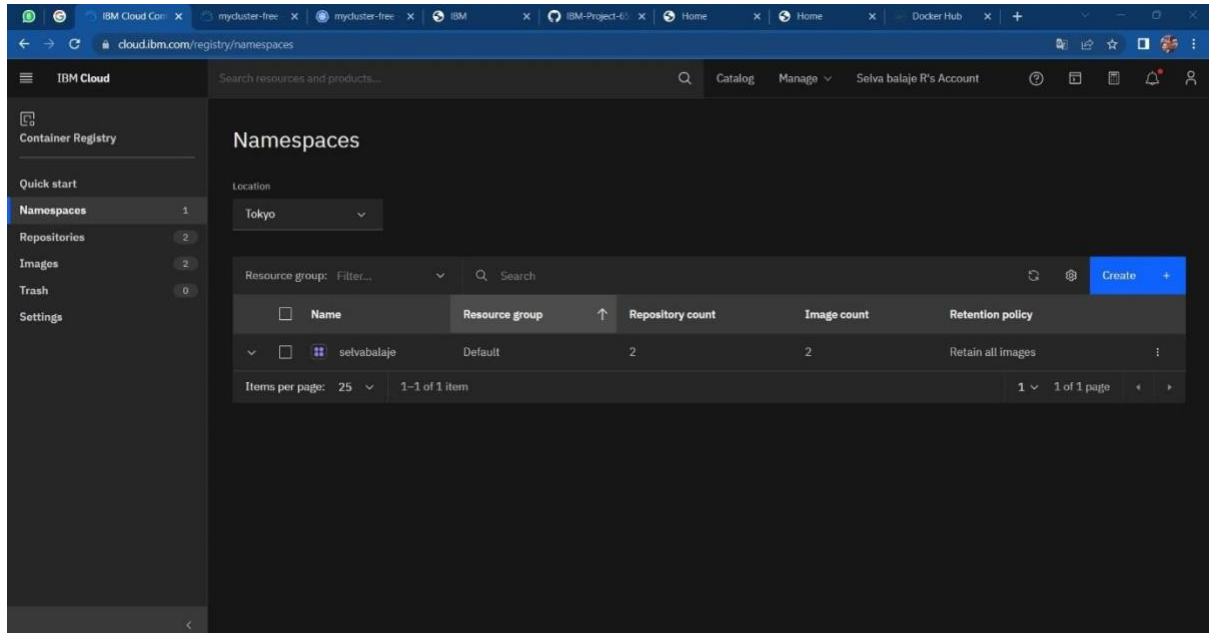








**Step 3:** Create a IBM container registry and push docker image of flask application or job portal app.





IBM Cloud Con x mycluster-free x mycluster-free x IBM x IBM-Project-60 x Home x Home x Docker Hub x

cloud.ibm.com/registry/repos

IBM Cloud

Search resources and products...

Container Registry

Quick start

Namespaces 1

Repositories 2

Images 2

Trash 0

Settings

## Repositories

Location: Tokyo

Search

Create +

<input type="checkbox"/>	Name	Image count	Namespace	Last updated	
<input checked="" type="checkbox"/>	job-portal jp.icr.io/selvabalaje/job-portal	1	selvabalaje	1 hour ago	:
<input checked="" type="checkbox"/>	blog-in-flask-master jp.icr.io/selvabalaje/blog-in-flask-master	1	selvabalaje	2 days ago	:

Items per page: 25 1-2 of 2 items 1 1 of 1 page

IBM Cloud Con x mycluster-free x mycluster-free x IBM x IBM-Project-60 x Home x Home x Docker Hub x

cloud.ibm.com/registry/images

IBM Cloud

Search resources and products...

Container Registry

Quick start

Namespaces 1

Repositories 2

Images 2

Trash 0

Settings

## Images

Location: Tokyo

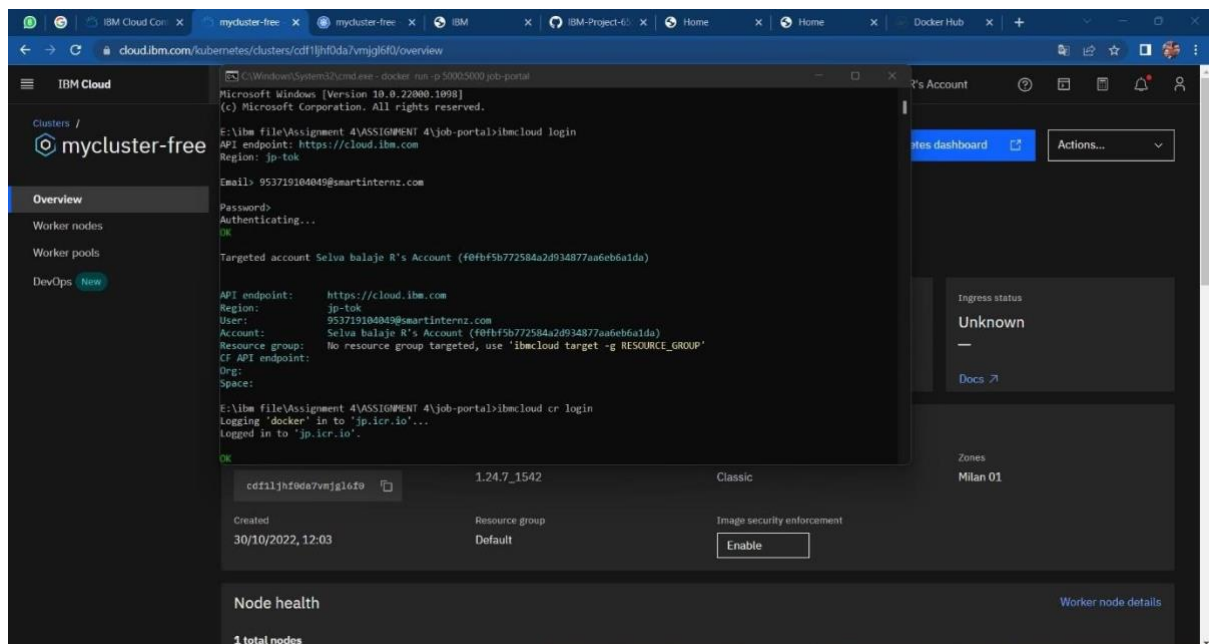
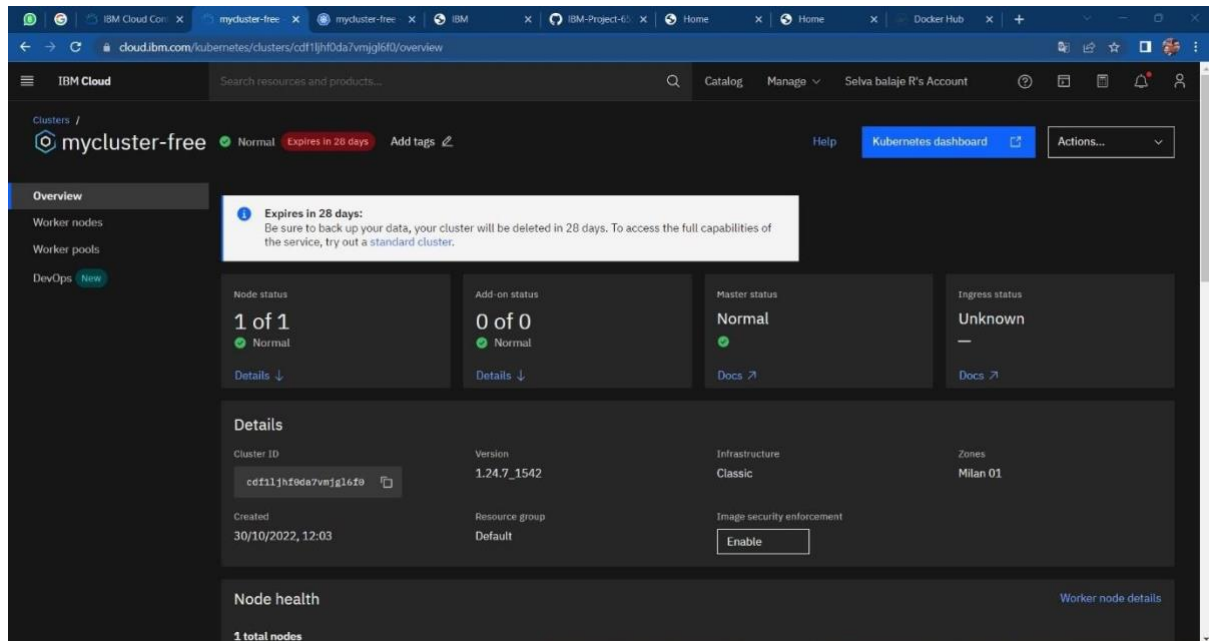
View by: Digest Search

Create +

<input type="checkbox"/>	Repository@digest	Tags	Manifest type	Created	Size	Security status	
<input type="checkbox"/>	selvabalaje/job-portal@sha256:c3fadc9987c2...	latest	Docker	1 hour ago	360 MB	24 issues	:
<input type="checkbox"/>	selvabalaje/blog-in-flask-master@sha256:d27973686891...	latest	Docker	2 days ago	356 MB	23 issues	:

Items per page: 25 1-2 of 2 items 1 1 of 1 page

**Step 4:** Create a Kubernetes cluster in IBM cloud and deploy flask application image or job portal image and also expose the same app to run in Nodeport.



IBM Cloud

Clusters / mycluster-free

Overview

Worker nodes

Worker pools

DevOps [New](#)

```
E:\ibm file\Assignment 4\ASSIGNMENT 4\job-portal>ibmcloud cr login
Logging 'docker' in to 'jp.icr.io'...
Logged in to 'jp.icr.io'.

E:\ibm file\Assignment 4\ASSIGNMENT 4\job-portal>ibmcloud plugin list
Listing installed plug-ins...

Plugin Name      Version  Status  Private endpoints supported
container-registry 1.0.2    true    false
container-service[kubernetes-service/ks] 1.0.459 false    false
observe-service[ob] 1.0.82    false    false

E:\ibm file\Assignment 4\ASSIGNMENT 4\job-portal>docker push jp.icr.io/selvahalaje/job-portal
Using default tag: latest
The push refers to repository [jp.icr.io/selvahalaje/job-portal]
d1e94296717c: Pushed
21d6f97abdb1: Mounted from selvahalaje/blog-in-flask-master
79270488747d: Mounted from selvahalaje/blog-in-flask-master
1646c2188de8: Mounted from selvahalaje/blog-in-flask-master
bfc1deb8136e: Mounted from selvahalaje/blog-in-flask-master
1f12318682dc: Mounted from selvahalaje/blog-in-flask-master
3d6eb1152931: Mounted from selvahalaje/blog-in-flask-master
100796cdf3b1: Mounted from selvahalaje/blog-in-flask-master
54ac35a6fa0b: Mounted from selvahalaje/blog-in-flask-master
8d51c618126f: Mounted from selvahalaje/blog-in-flask-master
9ff6e4d46744: Mounted from selvahalaje/blog-in-flask-master

cd11jhf0da7vmjgl6f9 1.24.7_1542 Classic

Created 30/10/2022, 12:03 Resource group Default Image security enforcement Enable

Node health 1 total nodes
```

Worker node details

IBM Cloud

Clusters / mycluster-free

Overview

Worker nodes

Worker pools

DevOps [New](#)

```
E:\ibm file\Assignment 4\ASSIGNMENT 4\job-portal>docker push jp.icr.io/selvahalaje/job-portal
Using default tag: latest
The push refers to repository [jp.icr.io/selvahalaje/job-portal]
d1e94296717c: Pushed
21d6f97abdb1: Mounted from selvahalaje/blog-in-flask-master
79270488747d: Mounted from selvahalaje/blog-in-flask-master
1646c2188de8: Mounted from selvahalaje/blog-in-flask-master
bfc1deb8136e: Mounted from selvahalaje/blog-in-flask-master
1f12318682dc: Mounted from selvahalaje/blog-in-flask-master
3d6eb1152931: Mounted from selvahalaje/blog-in-flask-master
100796cdf3b1: Mounted from selvahalaje/blog-in-flask-master
54ac35a6fa0b: Mounted from selvahalaje/blog-in-flask-master
8d51c618126f: Mounted from selvahalaje/blog-in-flask-master
9ff6e4d46744: Mounted from selvahalaje/blog-in-flask-master
a89d1d47b5a1: Mounted from selvahalaje/blog-in-flask-master
655ed1b7a428: Mounted from selvahalaje/blog-in-flask-master
latest: digest: sha256:c3fadc99b7c21775b6d76dbf8ac701f9bb3417b5380a7bce0f214f8f82db48e size: 3054

E:\ibm file\Assignment 4\ASSIGNMENT 4\job-portal>kubectl config current-context mycluster-free/cd11jhf0da7vmjgl6f9

E:\ibm file\Assignment 4\ASSIGNMENT 4\job-portal>kubectl apply -f kubernetes/ibm_deployment.yaml
Unable to connect to the server: failed to refresh token: oauth2: cannot fetch token: 400 Bad Request
Response: {"errorCode": "BXNIM4088", "errorMessage": "Provided refresh token is expired.", "context": {"requestId": "en2wd2c-560af8775e6a4728a15cale980f36c", "requestType": "Incoming_Identity_token", "userAgent": "Go-http-client/2.0", "url": "https://identity-1-ap-north-1.amazonaws.com", "instanceId": "i-10-14611-293c9a8-6778f68cf-zfpwg", "threadId": "c5689", "host": "i-10-14611-293c9a8-6778f68cf-zfpwg", "startTime": "31.10.2022 18:18:36:519 UTC", "endTime": "31.10.2022 18:18:36:526 UTC", "elapsedTime": "77", "locale": "en_US", "clusterName": "iam-id-prod-ap-north-tok84"}}

E:\ibm file\Assignment 4\ASSIGNMENT 4\job-portal>ibmcloud ks cluster config --cluster cd11jhf0da7vmjgl6f9

cd11jhf0da7vmjgl6f9 1.24.7_1542 Classic

Created 30/10/2022, 12:03 Resource group Default Image security enforcement Enable

Node health 1 total nodes
```

Worker node details

IBM Cloud

Clusters / mycluster-free

Overview

Worker nodes

Worker pools

DevOps **New**

```
E:\ibm file\Assignment 4\ASSIGNMENT 4\job-portal>kubectl apply -f kubernetess/ibm_deployment.yaml
deployment.apps/job-portal created
E:\ibm file\Assignment 4\ASSIGNMENT 4\job-portal>kubectl apply -f kubernetess/flask_service.yaml
service/flask-app-service configured
E:\ibm file\Assignment 4\ASSIGNMENT 4\job-portal>kubectl apply -f kubernetess/flask_ingress.yaml
ingress.networking.k8s.io/flask-app-ingress unchanged
E:\ibm file\Assignment 4\ASSIGNMENT 4\job-portal>kubectl describe svc flask-app-service
Name: flask-app-service
Namespace: default
Labels: <none>
Annotations: <none>
Selector: app=job-portal
Type: NodePort
IP Family Policy: SingleStack
IP Families: IPv4
IP: 172.21.170.240
IPs: 172.21.170.240
Port: <unset> 5000/TCP
TargetPort: 5000/TCP
NodePort: <unset> 32437/TCP
Endpoints: 172.30.255.18:5000,172.30.255.19:5000,172.30.255.20:5000
Session Affinity: None
External Traffic Policy: Cluster
Events: <none>
```

Created 30/10/2022, 12:03

Resource group Default

Image security enforcement **Enable**

Node health 1 total nodes

Worker node details

Ingress status Unknown

Docs

Zones Milan 01

kubernetes

default

Search

Workloads

Workload Status

Running 2 Deployments

Running 8 Pods

Running 2 Replica Sets

Deployments

Name	Images	Labels	Pods	Created
job-portal	Show all	-	3 / 3	40 minutes ago
blog-in-flask	Show all	-	5 / 5	a day ago

IBM Cloud Con

mycluster-free

mycluster-free

IBM

IBM-Project-0

Home

Home

Docker Hub

eu-de.containers.cloud.ibm.com/kubeproxy/clusters/cdf11jh0da7vmjgl6f0/service/#/workloads?namespace=default

kubernetes

default

Search

+🔔👤

Workloads

Workloads

Cron Jobs

Daemon Sets

Deployments

Jobs

Pods

Replica Sets

Replication Controllers

Stateful Sets

Service

Ingresses

Ingress Classes

Services

Config and Storage

Config Maps

Persistent Volume Claims

Secrets

Pods

Name	Images	Labels	Node	Status	Restarts	CPU Usage (cores)	Memory Usage (bytes)	Created ↑	
job-portal-864894f96-5f2sg	Show all	Show all	10.144.216.57	Running	0	1.00m	20.86Mi	41 minutes ago	⋮
job-portal-864894f96-lxd2z	Show all	Show all	10.144.216.57	Running	0	1.00m	21.19Mi	41 minutes ago	⋮
job-portal-864894f96-pll2g	Show all	Show all	10.144.216.57	Running	0	1.00m	20.70Mi	41 minutes ago	⋮
blog-in-flask-575f58686c-wmqff	Show all	Show all	10.144.216.57	Running	0	1.00m	19.82Mi	a day ago	⋮
blog-in-flask-575f58686c-6dggg	Show all	Show all	10.144.216.57	Running	0	1.00m	19.95Mi	a day ago	⋮
blog-in-flask-575f58686c-4j2g	Show all	Show all	10.144.216.57	Running	0	1.00m	19.97Mi	a day ago	⋮
blog-in-flask-575f58686c-8gkts	Show all	Show all	10.144.216.57	Running	0	1.00m	19.80Mi	a day ago	⋮
blog-in-flask-575f58686c-lp64m	Show all	Show all	10.144.216.57	Running	0	1.00m	20.54Mi	a day ago	⋮

Replica Sets

Name	Images	Labels	Pods	Created ↑	
job-portal-864894f96	Show all	Show all	3 / 3	41 minutes ago	⋮
blog-in-flask-575f58686c	Show all	Show all	5 / 5	a day ago	⋮

IBM Cloud Con

mycluster-free

mycluster-free

IBM

IBM-Project-0

Home

Home

Docker Hub

eu-de.containers.cloud.ibm.com/kubeproxy/clusters/cdf11jh0da7vmjgl6f0/service/#/workloads?namespace=default

kubernetes

default

Search

+🔔👤

Workloads

Workloads

Cron Jobs

Daemon Sets

Deployments

Jobs

Pods

Replica Sets

Replication Controllers

Stateful Sets

Service

Ingresses

Ingress Classes

Services

Config and Storage

Config Maps

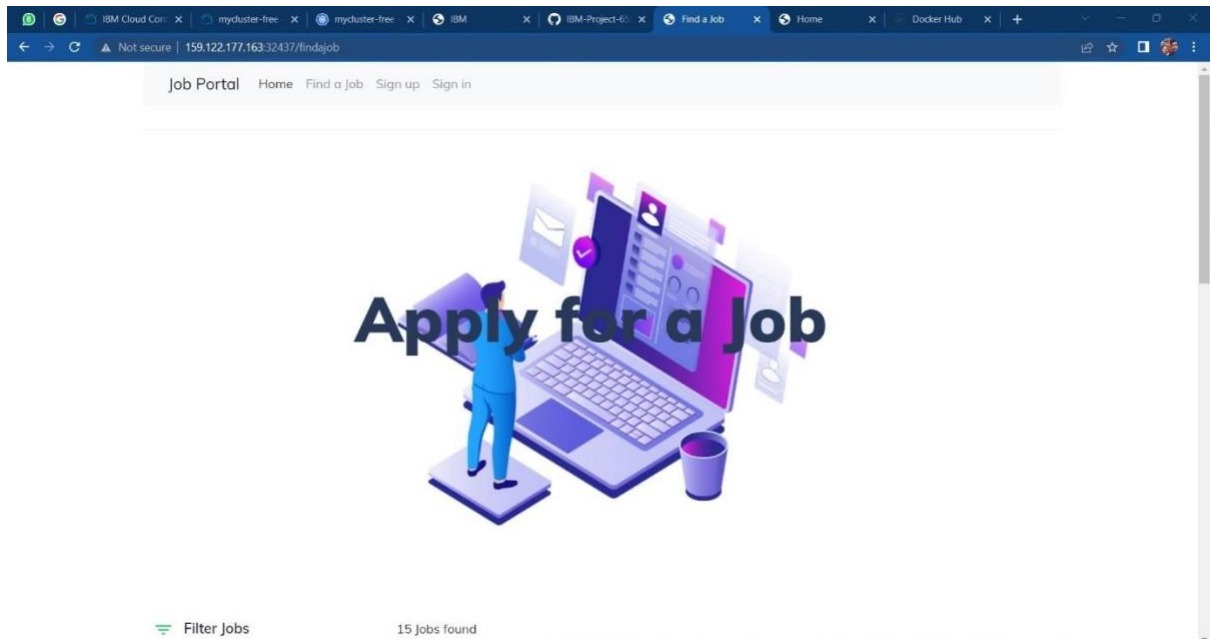
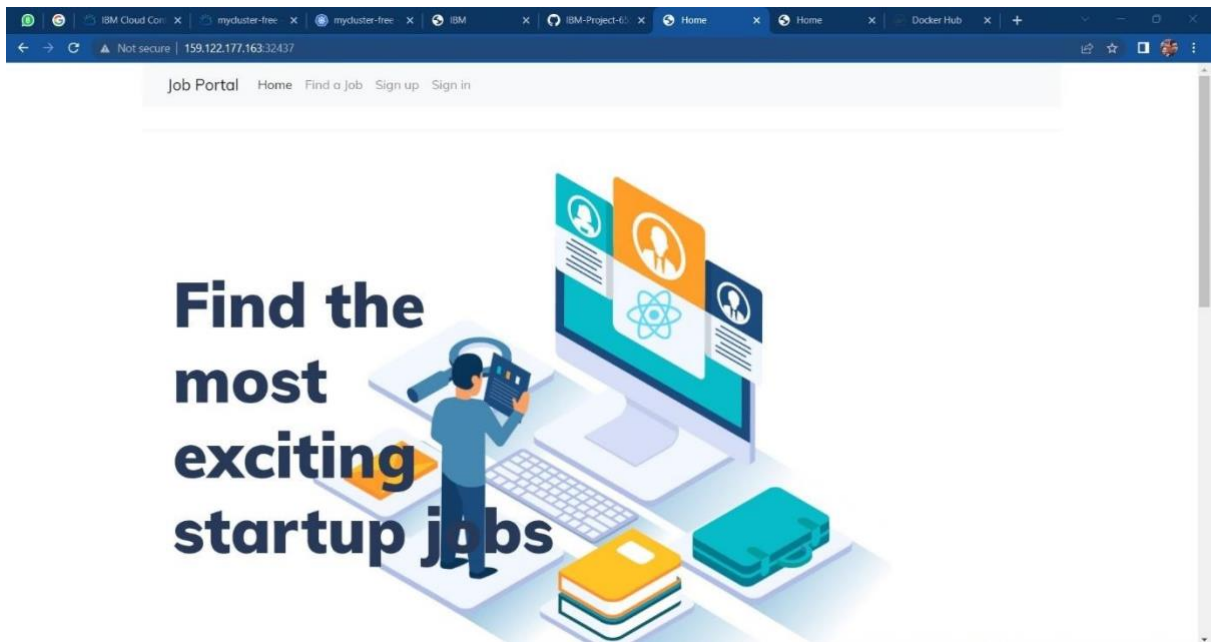
Persistent Volume Claims

Secrets

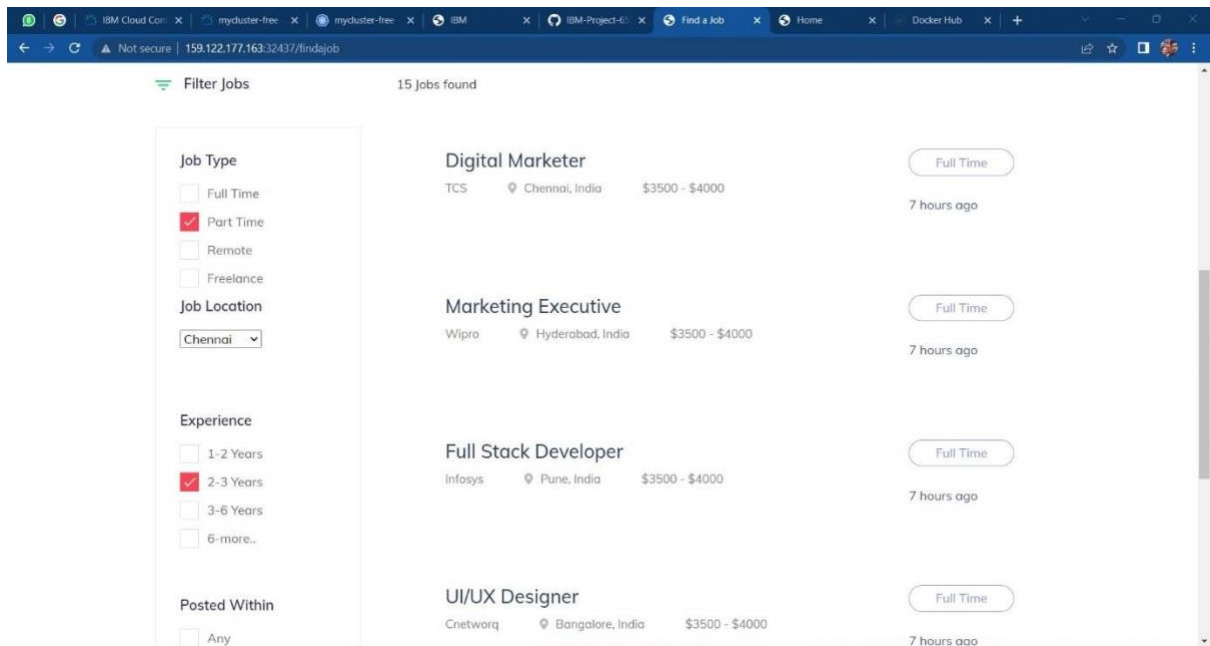
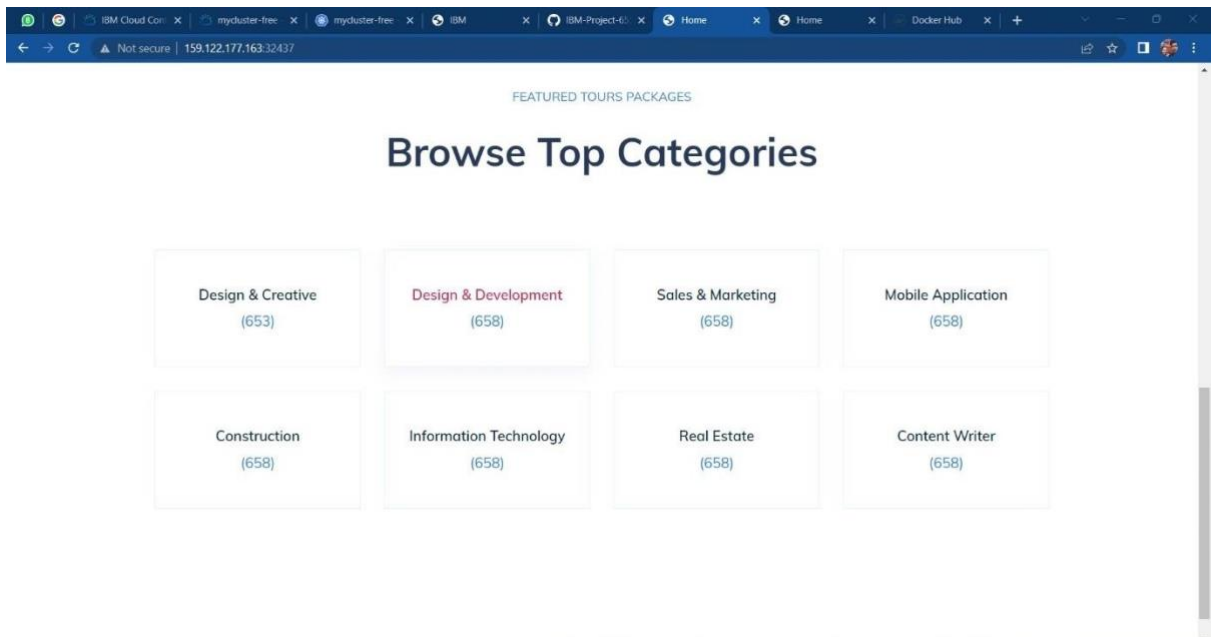
job-portal-864894f96-5f2sg	Show all	Show all	10.144.216.57	Running	0	1.00m	20.86Mi	41 minutes ago	⋮
job-portal-864894f96-lxd2z	Show all	Show all	10.144.216.57	Running	0	1.00m	21.19Mi	41 minutes ago	⋮
job-portal-864894f96-pll2g	Show all	Show all	10.144.216.57	Running	0	1.00m	20.70Mi	41 minutes ago	⋮
blog-in-flask-575f58686c-wmqff	Show all	Show all	10.144.216.57	Running	0	1.00m	19.82Mi	a day ago	⋮
blog-in-flask-575f58686c-6dggg	Show all	Show all	10.144.216.57	Running	0	1.00m	19.95Mi	a day ago	⋮
blog-in-flask-575f58686c-4j2g	Show all	Show all	10.144.216.57	Running	0	1.00m	19.97Mi	a day ago	⋮
blog-in-flask-575f58686c-8gkts	Show all	Show all	10.144.216.57	Running	0	1.00m	19.80Mi	a day ago	⋮
blog-in-flask-575f58686c-lp64m	Show all	Show all	10.144.216.57	Running	0	1.00m	20.54Mi	a day ago	⋮

Replica Sets

Name	Images	Labels	Pods	Created ↑	
job-portal-864894f96	Show all	Show all	3 / 3	41 minutes ago	⋮
blog-in-flask-575f58686c	Show all	Show all	5 / 5	a day ago	⋮









☐ 3-6 Years

☐ 6-more...

Posted Within

☐ Any

☒ Today

☐ Last 2 days

☐ Last 3 days

☐ Last 5 days

☐ Last 10 days

UI/UX Designer

Cnetworq

Bangalore, India

\$3500 - \$4000

Full Time

7 hours ago

Program Analyst Trainee

CTS

Coimbatore, India

\$3500 - \$4000

Full Time

7 hours ago

Data Analyst

Delloite

New Delhi, India

\$3500 - \$4000

Full Time

7 hours ago

Job Portal

Home

Find a Job

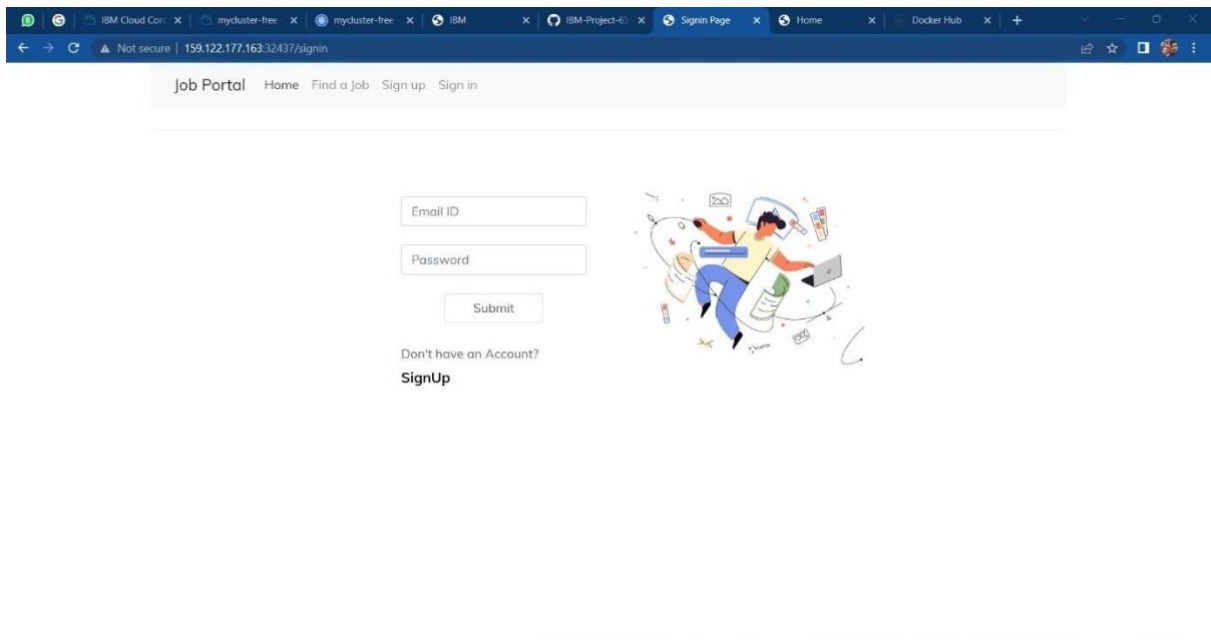
Sign up

Sign in

Illustration of a person working on a computer with a ladder and books.

Already have an Account?

[Signin](#)



View the deployed Job-portal flask application by clicking the below link:

<http://159.122.177.163:32437/>